UNITED STATES PATENT AND TRADEMARK OFFICE

NOTICE OF ALLOWANCE AND FEE(S) DUE

| 22971 | 7590 | 12/16/2009 |

MICROSOFT CORPORATION
ONE MICROSOFT WAY
REDMOND, WA 98052-6399

EXAMINER
SURVILLO, OLEG

ART UNIT	PAPER NUMBER
2442	

DATE MAILED: 12/16/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,928	10/28/2003	Pablo R. Rodriguez	304931.01	7025

TITLE OF INVENTION: WIRELESS NETWORK ACCESS TECHNOLOGIES FOR RETRIEVING A VIRTUAL RESOURCE VIA A PLURALITY OF WIRELESS NETWORK INTERFACES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	03/16/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: <u>Mail</u>

Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

or <u>Fax</u> (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

22971   7590   12/16/2009

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REDMOND, WA 98052-6399

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

_____ (Depositor's name)

_____ (Signature)

_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,928	10/28/2003	Pablo R. Rodriguez	304931.01	7025

TITLE OF INVENTION: WIRELESS NETWORK ACCESS TECHNOLOGIES FOR RETRIEVING A VIRTUAL RESOURCE VIA A PLURALITY OF WIRELESS NETWORK INTERFACES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	03/16/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
SURVILLO, OLEG	2442	709-249000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❏ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❏ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE   (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❏ Individual ❏ Corporation or other private group entity ❏ Government

4a. The following fee(s) are submitted:

❏ Issue Fee
❏ Publication Fee (No small entity discount permitted)
❏ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

❏ A check is enclosed.
❏ Payment by credit card. Form PTO-2038 is attached.
❏ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❏ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

❏ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from **anyone** other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____   Date _____

Typed or printed name _____   Registration No. _____

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,928	10/28/2003	Pablo R. Rodriguez	304931.01	7025

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 384 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 384 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

	Application No.	Applicant(s)
Notice of Allowability	10/695,928	RODRIGUEZ, PABLO R.
	Examiner	Art Unit
	OLEG SURVILLO	2442

*-- The **MAILING DATE** of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Amendment after Non-Final Rejection, response dated 07/23/09*.

2. ☒ The allowed claim(s) is/are *10, 12-24, 26-33, and 35, renumbered as claims 1-23*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☒ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

EXAMINER'S AMENDMENT / COMMENT

Oath/Declaration

This application presents one or more claims for subject matter not originally claimed or embraced in the statement of the invention. The original claims and statement of the invention do not contain any discussion of the virtual resource being a web page, the plurality of objects being elements of the web page, and the wireless network access device being an individual device, as in claims 10 and 23.

A supplemental oath or declaration is required under 37 CFR 1.67. The new oath or declaration must properly identify the application of which it is to form a part, preferably by application number and filing date in the body of the oath or declaration. See MPEP §§ 602.01 and 602.02.

Examiner's Amendment

Examiner's amendment to the record appears below. Should the changes be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be filed no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with L. Alan Collins, Reg. No. 57,646 on November 30, 2009.

In the specification:

replace the title with the following:

WIRELESS NETWORK ACCESS TECHNOLOGIES FOR RETRIEVING A

VIRTUAL RESOURCE VIA A PLURALITY OF WIRELESS NETWORK INTERFACES

In the claims:

Claims 12-15, 23, and 32 are currently amended.

Claims 10, 12-24, 26-33, and 35 remain in the application.

1-9.   (Canceled)

10.   (Previously Presented) A method for retrieving a virtual resource from a remote computer via a plurality of wireless network interfaces, comprising:

receiving via a local communications network at a local network interface of a wireless network access device, from a local computing device coupled to the local communications network, an incoming request for the virtual resource, the virtual resource being a web page, wherein the virtual resource comprises a plurality of objects, the plurality of objects being elements of the web page;

determining a number of available wireless network interfaces of the plurality of wireless network interfaces of the wireless network access device, each of the plurality of wireless network interfaces communicatively coupled to a distinct wireless network of a plurality of wireless networks that communicatively couple the wireless network access device to the remote computer;

determining a number of objects in the virtual resource sufficient to retrieve the virtual resource and return it to the local computing device;

assigning by the wireless network access device each object in the virtual resource to at least one of the available wireless network interfaces, at least one object

in the virtual resource being assigned to a different available wireless network interface

than another object in the virtual resource;

activating the available wireless network interfaces to which objects of the virtual

resource have been assigned; and

transmitting from the wireless network access device an outgoing request to the

remote computer for each object in the virtual resource, each outgoing request

corresponding to the incoming request, wherein each outgoing request is transmitted

via the available wireless network interface to which the corresponding object in the

virtual resource is assigned, and wherein each object in the virtual resource is

downloaded from the remote computer in a conventional manner, responsive to the

outgoing requests, to the wireless network access device via the corresponding

assigned wireless network interface, the method being performed by a processor of the

wireless network access device, wherein the wireless network access device is an

individual device that includes the plurality of wireless network interfaces, the local

network interface, and the processor, the local network interface distinct from any of the

plurality of wireless network interfaces.

11.   (Canceled)

12.   (Currently Amended) The method of claim 10, wherein determining a number of

available wireless network interfaces comprises monitoring one or more characteristics

of [[a]] each of the plurality of wireless network interface interfaces.

13.   (Currently Amended) The method of claim 10, wherein determining a number of available wireless network interfaces comprises monitoring one or more characteristics of [[a]] each of the plurality of wireless network interface interfaces, wherein a signal characteristic is selected from a group of signal characteristics comprising: signal-to-noise ratio, available bandwidth, congestion, signal strength, connection cost, and bit error rate.

14.   (Currently Amended) The method of claim 10, wherein determining a number of available wireless network interfaces comprises monitoring one or more characteristics of [[a]] each of the plurality of wireless network interface interfaces stored in a data table in memory.

15.   (Currently Amended) The method of claim 10, wherein determining a number of available wireless network interfaces comprises querying the wireless network interfaces.

16.   (Previously Presented) The method of claim 10, wherein the determining a number of objects in the virtual resource comprises querying the remote computer.

17.   (Previously Presented) The method of claim 10, wherein the assigning comprises

assigning an object to two or more of the available wireless network interfaces if the

size of the object exceeds a threshold.

18.   (Previously Presented) The method of claim 10, wherein the assigning comprises

assigning an object to two or more available wireless network interfaces if the size of

the object exceeds a threshold, wherein the threshold is a function of the bandwidth of

the available wireless network interfaces.

19.   (Previously Presented) The method of claim 10, wherein the assigning comprises

assigning an object to two or more available wireless network interfaces if the size of

the object exceeds a threshold, wherein the threshold is a function of the size of an

object relative to the size of other objects in the virtual resource.

20.   (Previously Presented) The method of claim 10, further comprising

collating the received objects to construct the virtual resource.

21.   (Previously Presented) The method of claim 20, further comprising:

transmitting the collated virtual resource to the computing device that originated the

incoming request.

22.   (Original) A computer-readable medium having computer-executable instructions

for performing the method recited in claim 10.

23.   (Currently Amended) An apparatus, comprising:

at least one local communication network interface for receiving a request for a

virtual resource, the virtual resource being a web page, wherein the virtual resource

comprises a plurality of objects, the plurality of objects being elements of the web page;

a plurality of wireless network interfaces, each of the plurality of wireless network

interfaces communicatively coupled to a distinct wireless network of a plurality of

wireless networks that communicatively couple the apparatus to a remote computer, the

remote computer including the virtual resource;

a memory module; and

a processor executing logic instructions that cause the apparatus to:

determine a number of available wireless network interfaces of the

plurality of wireless network interfaces of the apparatus, each of the plurality of

wireless network interfaces communicatively coupled to a distinct wireless

network of the plurality of wireless networks that communicatively couple the

apparatus to the remote computer including the virtual resource;

determine a number of objects in the virtual resource sufficient to retrieve

the virtual resource and return it to the local computing device;

assign each object in the virtual resource to at least one of the available

wireless network interfaces, at least one object in the virtual resource being

assigned to a different available wireless network interface than another object in

the virtual resource; and

transmit an outgoing request to the remote computer for each object in the

virtual resource, wherein each outgoing request ~~specifies~~ is transmitted via the

available wireless network interface ~~assigned~~ to which the corresponding object

in the virtual resource is assigned, each outgoing request corresponding to the

incoming request, and wherein each object in the virtual resource is downloaded

from the remote computer in a conventional manner, responsive to the outgoing

requests, to the apparatus via the corresponding assigned wireless network

~~interfaces~~ interface, wherein the apparatus is an individual device that includes

the plurality of wireless network interfaces, the local network interface, the

memory module, and the processor, the local network interface distinct from any

of the plurality of wireless network interfaces.

24.   (Original) The apparatus of claim 23, wherein the at least one local

communication network interface comprises a wireless network interface.

25.   (Canceled)

26.   (Original) The apparatus of claim 23, wherein the processor polls the wireless

network interfaces to determine characteristics of the communication connections

managed by the wireless network interfaces.

27.   (Previously Presented) The apparatus of claim 23, wherein the processor polls the plurality of wireless network interfaces on a periodic basis to determine characteristics of communication connections managed by the plurality of wireless network interfaces.

28.   (Previously Presented) The apparatus of claim 23, wherein the processor polls the plurality of wireless network interfaces in response to a received request to determine characteristics of communication connections managed by the plurality of wireless network interfaces.

29.   (Original) The apparatus of claim 23, wherein the processor assigns objects to wireless network interfaces according to an algorithm that maximizes bandwidth.

30.   (Original) The apparatus of claim 23, wherein the processor assigns multiple wireless network interfaces to objects that exceed a size threshold.

31.   (Original) The apparatus of claim 23, wherein the processor assigns multiple wireless network interfaces to objects that exceed a size threshold that is a function of the available bandwidth on one or more wireless network interfaces.

32. (Currently Amended) The apparatus of claim 23, wherein the processor assigns multiple wireless network interfaces to objects that exceed a size threshold that is a function of the size of an object relative to other objects in [[a]] the virtual resource.

33. (Previously Presented) The apparatus of claim 23, wherein the processor is further configured to receive requested objects transmitted across at least some of the plurality of wireless networks.

34. (Canceled)

35. (Previously Presented) The apparatus of claim 23, wherein the processor is further configured to receive requested objects transmitted across at least some of the plurality of wireless networks, and to transmit received objects over the local communication network interface.

Allowed Claims

Claims 10, 12-24, 26-33, and 35 are allowed.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

none of the qualifying prior art references of record, taken alone or in

combination, disclose or reasonably suggest: a combination of elements as claimed in

independent claims 10 and 23, wherein the virtual resource is a web page and the

plurality of objects are elements of the web page. Specifically, the prior art of record fails

to disclose or reasonably suggest elements of the web page being assigned by the

wireless network access device to the available wireless network interfaces, as such are

recited in combination with the other claim elements. Chebrolu, for example, teaches a

packet scheduling algorithm. However, as persuasively argued by applicant, packets of

Chebrolu reference are patentably distinct from claimed elements of the web page.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG SURVILLO whose telephone number is (571)272-9691. The examiner can normally be reached on M-Th 8:30am - 6:00pm; F 8:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Oleg Survillo

Phone: 571-272-9691

/saleh najjar/
Supervisory Patent Examiner, Art Unit 2455